



## WELDING PROCEDURE SPECIFICATION

WPS- 1000-1	REV. NO.: 0	DATE: 9/1/2004	**APPLICABILITY**
WELDING PROCESS/ES SMAW- and SMAW-		ASME: X	AWS: X
SUPPORTING PQ Z-WS-4(X-X)	Z-WS-5(X-X)	P-WS-1-1	OTHER: X
P-WS-2-1	P-WS-31-1	P-WS-3-1	P-WS-238

**JOINT** This WPS shall be used in conjunction with the General Welding Standards (GWS) and Welding Fabrication Procedure (WFP) sections and criteria for joint details, repairs, NDE, inspection etc.

Weld Joint Type Butt/Fillet	Class: Full or Partial Penetration
See GWS 1-06 for details	Preparation: Thermal/Mechanical
Root Opening: 0" to .250"	Backing: With/Without
Backgrind root: on double sided joints	Backing Mat.: Metal when used
Bkgrd Method: Arc gouge and or grind	GTAW Flux: N/A      Backing Retainer: No

<b>FILLER METALS:</b>		Class: E6010	and E70XX
A No: 1	SFA Class: 5.1 and 5.5	F No: 3 and 4	Size: 3/32 1/8 5/32 3/16
Insert: N	Insert Desc.: N/A	<b>Weld Metal Thickness Range:</b>	
Flux: Type: NA	Size: N/A	AWS: 0.063	thru 99.999
Filler Metal Note: Low Hydrogen Electrodes limited to Uphill progress	ASME: 0.062	thru 8.000	

<b>BASE MATERIAL</b>	P No. 1	Gr No. All	to: P No. 1	Gr No. All
Spec. Mild Steel	Grade: All	to: Spec. Mild Steel	Grade: All	
Pipe Dia Range: Groove > 0				
Thickness Range: Groove :	AWS: 0.063	thru 99.999	ASME: 0.063	thru 8.000

<b>QUALIFIED POSITIONS</b> All	<b>Vertical Progression:</b> All
Preheat Min. Temp.: 70 F	GAS: Shielding: N/A or N/A
Interpass Max. Temp. 500 F	Gas Composition: 0 % 0 % 0 %
Preheat Maintenance: 70 F	Gas Flow Rate cfh 0 to 0
	Backing Gas/Comp: N/A 0 %
PWHT: Time @ F Temp.	Backing Gas Flow cfh 0 to 0
Temp. Range: F to F	Trailing Gas/Comp: N/A %

<b>PREPARED BY</b> <u>Kelly Bingham</u> Signature on file at FWO-DECS	<b>DATE:</b> 1/22/2004
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**Note: For SC/SS/ML-1/ML-2 work, this WPS requires independent review.**

**WELDING CHARACTERISTICS:**

**Current:** DCEP and DCEP      **Tungsten type:** N/A      **Transfer Mode:** N/A  
**Ranges: Amps** 50 to 205      **Pulsing Cycle:** 0 to 0  
**Volts** 12 to 20      **Background Current:** 0  
**Fuel Gas:** N/A      **Flame:** N/A      **Braze temp. F** to

**WELDING TECHNIQUE:** For cleaning, grinding, and inspection criteria refer to Volume 2, Welding Fabrication Procedures

**Technique:** Manual      **Cleaning Method:** Wire Brush, File, Grind, Chip  
**Single Pass of Multi Pass:** M      **Stringer or Weave bead (S/W):** S/W      **Oscillation:** N  
**GMAW Gun Angle °:** to      **Forehand or Backhand for GMAW (F/B):** N/A  
**Maximum K/J Heat Input**      **Travel speed/ipm:** 3 - 10      **Gas Cup Size:** N/A

**PROCEDURE QUALIFIED FOR:**

**Charpy "V" Notch:** N      **Nil-Ductil Transition Temperature:** N      **Dynamic Tear:** N

**Comments:** Peening is not allowed. No pass shall be greater than 1/2". Actual basemetal and weld metal thicknesses qualified may be further limited by the specified fabrication code.

Weld Layer	Manual Process	Filler Metals	Size	Amp Range	Volt Range	Travel ipm	Nozzel Angle	Other
1	SMAW-	E6010	3/32	50 95	12 20	3 10		
2	SMAW-	E70XX	1/8	95 205	12 20	3 10		
3			5/32					
4			3/16					
5								
6								
7								
8								

**REM.** \* Weld layers are representative only - actual number of passes and layer sequence may vary due to variations in joint design, thickness and fitup.